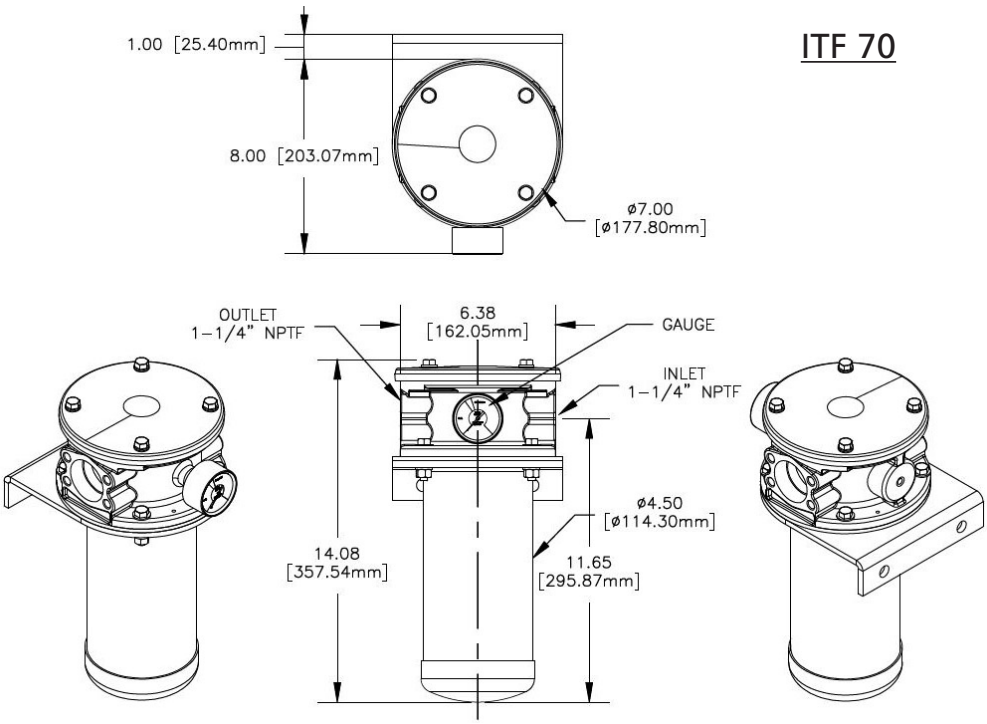
Inline Top Service Fuel Filter

ITF 70 | ITF 100



Metric dimensions in [ ].

ITF 70

Model	GPM	LPM	Standard Micron Rating
ITF 70	70	265	3
ITF 100	100	380	3

70 & 100 gpm
265 & 380 lpm
100 psi
7 bar

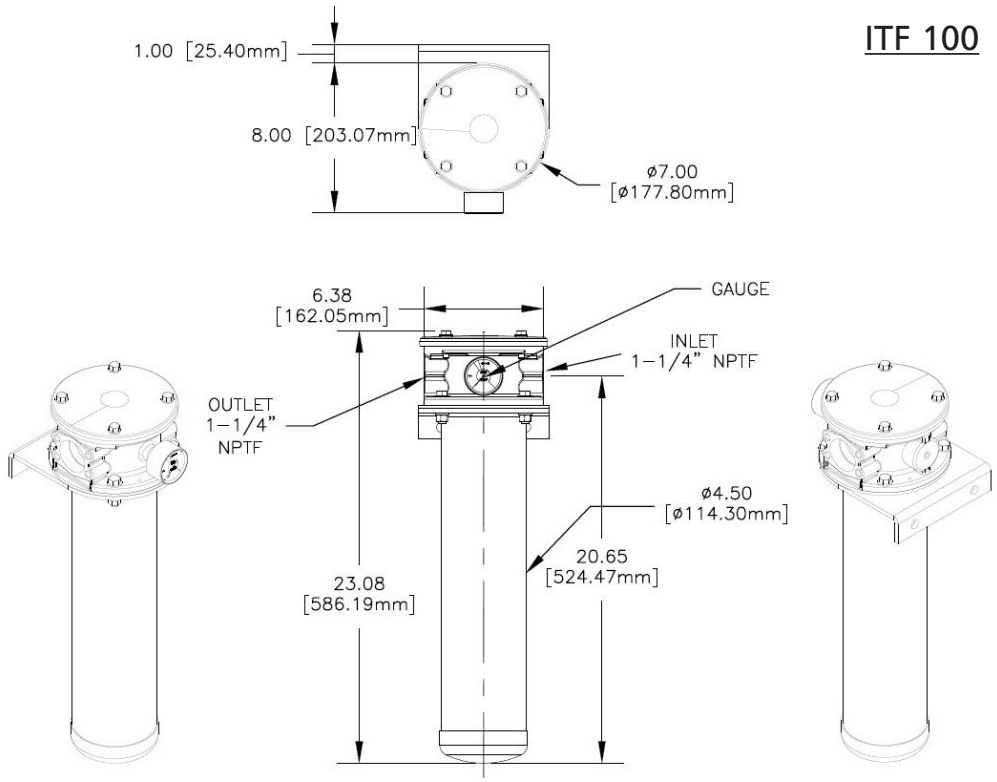
Features and Benefits

- Low pressure top servicing inline filter
- Unique side mounting flange provides reliable seal arrangement between head and bowl
- The use of E-DFE elements allows consolidation of inventoried replacement elements
- Visual alarm for dirt monitoring
- 3 micron element is standard. Optional micron ratings: 1, 5, 10 and 25. Waterblock elements available.

Filter Housing Specifications

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	100 psi (7 bar)
Min. Yield Pressure:	400 psi (28 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	90 psi (6 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 25 psi (1.7 bar) Full Flow: 48 psi (3.3 bar)
Porting Head: Element Case:	Sand Cast Aluminum 1-1/4" NPTF Steel
Weight:	13.5 lbs. (6.12 kg)
Standard Element Model:	E-DFE-3
Element Change Clearance:	8.0" (205 mm)

ITF 100



Metric dimensions in [ ].

Element Performance Information

	Element	Micron Rating	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402 $\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	Filtration Ratio wrt ISO 16889 Using APC calibrated per ISO 11171 $\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
	E-DFE-1	1	<1.0	<1.0	<1.0	<4.0	4.2
	E-DFE-3	3	<1.0	<1.0	<2.0	<4.0	4.8
	E-DFE-5	5	2.5	3.0	4.0	4.8	6.3
	E-DFE-10	10	7.4	8.2	10.0	8.0	10.0
	E-DFE-25	25	18.0	20.0	22.5	19.0	24.0
WATERBLOCK	E-DFE-1-W	1 (Waterblock)	N/A	N/A	N/A	<4.0	<4.0
WATERBLOCK	E-DFE-3-W	3 (Waterblock)	N/A	N/A	N/A	4.0	4.8
WATERBLOCK	E-DFE-5-W	5 (Waterblock)	N/A	N/A	N/A	5.1	6.4
WATERBLOCK	E-DFE-10-W	10 (Waterblock)	N/A	N/A	N/A	6.9	8.6
WATERBLOCK	E-DFE-25-W	25 (Waterblock)	N/A	N/A	N/A	15.4	18.5

Dirt Holding Capacity

Single Element	DHC (g)	Two Elements	DHC (g)	Waterblock Element	DHC (g)	Two Waterblock Elements	DHC (g)
E-DFE-1	112	E-DFE-1 (2)	224	E-DFE-1-W	61	E-DFE-1-W (2)	-
E-DFE-3	115	E-DFE-3 (2)	230	E-DFE-3-W	64	E-DFE-3-W (2)	123
E-DFE-5	119	E-DFE-5 (2)	238	E-DFE-5-W	63	E-DFE-5-W (2)	126
E-DFE-10	108	E-DFE-10 (2)	216	E-DFE-10-W	57	E-DFE-10-W (2)	114
E-DFE-25	93	E-DFE-25 (2)	186	E-DFE-25-W	79	E-DFE-25-W (2)	158

Element Collapse Rating: 150 psi d (10 bar)
Flow Direction: Outside In
Element Nomional Dimensions:

E-DFE: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
E-DFE (2): 3.9" (99 mm) O.D. x 18.0" (460 mm) long
E-DFE (3): 3.9" (99 mm) O.D. x 27.0" (690 mm) long

Element Selection Based on Flow Rate

Pressure	Element		Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 25 psi (1.7 bar) bypass valve.				
To 100 psi (7 bar)	E-DFE-1		E-DFE-1	E-DFE-1 (2)	E-DFE-1 (3)		
	E-DFE-3		E-DFE-3		E-DFE-3 (2)		
	E-DFE-5		E-DFE-5			E-DFE-5 (2)	
	E-DFE-10		E-DFE-10			E-DFE-10 (2)	
	Flow	gpm	20	40	60	80	100
		(L/min)	50	150	250		380

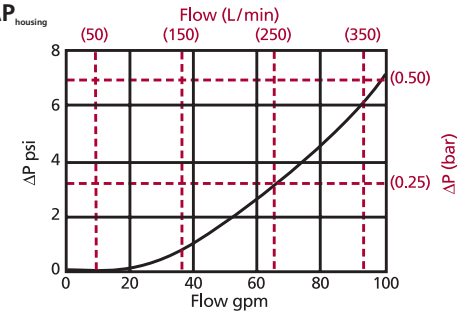
Multiple, stacked elements are used to achieve higher flow rates. Waterblock element information not available.

*( ) = Quantity of Elements used. If not specified, quantity of elements is one (1).

Pressure Drop Information Based on Flow Rate and Viscosity

ITF 100 $\Delta P_{housing}$ for fluids with sp gr = 0.86:

$\Delta \mathbf{P}_{housing}$



sp gr = specific gravity

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

$\Delta \mathbf{P}_{filter} = \Delta \mathbf{P}_{housing} + \Delta \mathbf{P}_{element}$

Exercise:

Determine ΔP at 40 gpm (151 L/min) for **E-DFE-1** using 200 SUS (44 cSt) fluid.

Solution:

$\Delta P_{housing}$ = 1.0 psi [.07 bar]

$\Delta P_{element}$ = 40 x .03 x (200÷150) = 1.6 psi
or
= [151 x (.03÷54.9) x (44÷32) = .11 bar]

ΔP_{total} = 1.0 + 1.6 = 2.6 psi
or
= [.07 + .11 = .18 bar]

$\Delta \mathbf{P}_{element}$

$\Delta P_{element}$ = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

	(1)	(2)	*Waterblock*	(1)	(2)
E-DFE-1	.20	.10	**E-DFE-1-W**	.43	
E-DFE-3	.10	.05	**E-DFE-3-W**	.32	.16
E-DFE-5	.08	.04	**E-DFE-5-W**	.28	.14
E-DFE-10	.05	.03	**E-DFE-10-W**	.23	.12
E-DFE-25	.04	.04	**E-DFE-25-W**	.14	.07

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor: Divide viscosity by 150 SUS (32 cSt).